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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,630	10/19/2004	Takanori Shimizu	NE297-PCT (US)	4085
21254 7590 08/10/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER CHIEM, DINH D	
			ART UNIT 2883	PAPER NUMBER
			MAIL DATE 08/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/511,630

Applicant(s)

SHIMIZU ET AL.

Examiner

Erin D. Chiem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 5-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This action is in response to applicant's request for continued examination filed in June 14, 2007. Currently claims 1 and 5-23 are pending.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-9, 12-14, and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida (US 6,897,430 B2).

In terms of claims 1, 12, and 21-23 Uchida discloses an optoelectronic hybrid integrated module (Fig. 3) and a logic LSI (Fig. 4, 1103) wherein the optoelectronic hybrid integrated module includes: an optical device for converting one of an optical signal into an electric signal and an electrical signal and an electrical signal into an optical signal (col. 3, lines 4-9 and col. 6, line 59 to col. 7 line 17); an input/output IC for drive-controlling the optical device (1201, 1208); and a transparent base material having electric wiring and light permeability (1205 upper clad; 1206 core; 1207 lower clad); wherein the optical device and the input/output IC are flip-chip mounted (1202) on a surface of the transparent base material; and wherein the electric wiring connects the optical device and the input/output IC so as to transfer an electric signal between them, and the electric wiring being positioned on a surface of the transparent base material (1104) opposite the surface where the optical device is mounted (since the optical device 1203, 1208) are spherical and are partially mounted within the substrate, examiner considers the electric wiring 1104 to be on the opposite surface of where the optical device is mounted), the electric wiring being provided as a ground electrode and serving as an electromagnetic shield for the optical device and the input/output IC (col. 13, lines 24-30). Furthermore, the logic LSI controls an electric signal input into or output from the optoelectronic hybrid integrated module (col. 12, lines 48-49), and wherein the optoelectronic hybrid integrated module and the logic LSI are mounted on the same substrate (Please see Fig. 3 and 4 for detail).

However, Uchida does not teach the light emitting device is mounted on the transparent base material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the light-emitting device on the transparent base material dependent on the device specification, since it has been held that constructing a formerly integral

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structure in various elements involves only routine skill in the art. Nerwin V. Erlichman, 168 USPQ 177, 179. Examiner welcomes the applicant to contend to examiner's argument by presenting unexpected result from experimentation that would show the advantage of a mounted light-emitting device as claimed.

Regarding claims 5-9, 13-14, and 17-20, Uchida discloses element 1208 is a light emitting device which converts an electric signal into an optical signal and outputs it (1211), and the input/output IC comprises a driver IC which outputs an electric signal to the optical device (col. 12, lines 39-42). Incorporated within the module is a light receiving device, which converts an optical signal into an electric signal (1203), and the input/output IC comprises an electric amplifier IC that amplifies an electric signal from the light-receiving device (col. 3, lines 34-36). Uchida further discloses the transparent base material comprises a transparent plate transmitting a light and the transparent plate (1205, 1206, 1207) comprises a material having high permeability to a wavelength of the optical device. The transparent base material comprises a flexible sheet transmitting a light, and the flexible sheet comprises a material having high permeability to a wavelength of the optical device (col. 3, lines 60-62). The optical device is further positioned directly under the light inputting/outputting portion (Fig. 7, '1706' '1780'). Applicant has not defined the scope of the material having "high permeability to a wavelength of the optical device" thus Uchida references reads upon the limitation since light is traveling through layer 1206, therefore, Uchida flexible transparent substrate has a high permeability to a wavelength of the optical device. Uchida teaches the means for light coupling are the embedded optical devices 1203 and 1208 that is integrally formed with the transparent base material.

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Regarding claim 9, notice in Fig. 4 that the light receiver and light transmitter also acts as an axis converter wherein the light axis is changed and referenced by the directionality of the arrows (1203, 1208).

Regarding claim 18, the light inputting/outputting portion comprises a convex lens formed on the transparent base material is shown in Fig. 4. Examiner considers the spherical lens protruding above the substrate (1104) to be the convex lens. And elements 1203 and 1208 optical receiver/transmitter are coupling units; coupling light into or out of the unit as obviated by the aforementioned terms (1210, 1211).

Claims 10-11, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida. Uchida discloses the invention of claim 1; however Uchida does not disclose the device and the input/output IC comprise an interpose which comprises a holder, a heat spreader, the transparent base material is fixed to a holding frame within which electric wiring is incorporated, and the optical device is sealed to the transparent base material devoid of an air gap.

Verdiell discloses an optoelectronic assembly which comprises of an interpose which further comprises a holder (fig. 1; '20'), a heat spreader (20) Verdiell calls '20' a raised platform (Para [00207]). Examiner also considers this "raised platform" as a holding frame within which electric wiring is incorporated (Para [0027]). Furthermore, Verdiell discusses a key property of the optoelectronic package is hermetic, wherein the components within the housing is filled through vias such that the sealed package is devoid of air gap (Para [0033]-[0037]).

Since Uchida and Verdiell are both from the same field of endeavor, the purpose disclosed by Verdiell would have been recognized in the pertinent art of Uchida.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to recognize the teaching of Verdiell of packaging the optoelectronic

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device for end-user handling and installation. The motivation for incorporating Verdiell teaching to Uchida's optoelectronic device is to encompass electrical and optical component of the a module within an encasing housing that prevents the electrical components from being damaged by environmental exposure.

### ***Response to Arguments***

Applicant's arguments filed June 14, 2007 have been fully considered but they are not persuasive. Applicant's only argument is that the light-emitting device is not taught as mounted by Uchida. Examiner finds this argument not persuasive because it has been held by the court (Nerwin v. Erlichman, 168, USPQ 177, 179) that making elements separable would be obvious to one having ordinary skill in the art. Applicant is welcome to contend this argument with unexpected experimental results.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin D. Chiem whose telephone number is (571) 272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

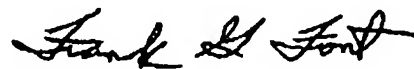
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

*Conclusion*

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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